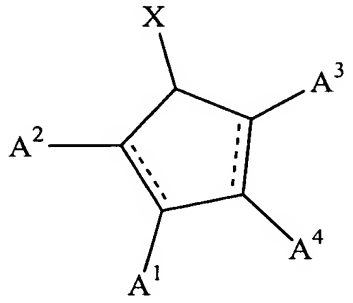
What is claimed is:

1. A method of controlling proliferative cells in a subject, comprising administering a therapeutically effective amount of at least one compound having the formula:



wherein

----- is an optional double bond;

A^1 and A^2 are independently H, Z_m-OR^6, oxo, halo, Z_m-CN, Z_m-NO_2, azido, Z_m-NR^6R^7, Z_m-$COOR^6$, Z_m-$CONR^6R^7$, Z_m-$C(=O)R^6$, Z_m-$OC(=O)R^6$, alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, thiol, thioalkyl, Z_m-cycloalkyl wherein said cycloalkyl is saturated or partially unsaturated, Z_m-heterocycloalkyl wherein said heterocycloalkyl is saturated or partially unsaturated, or Z_m-Ar, wherein said alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, Z_m-cycloalkyl, Z_m-heterocycloalkyl, and Z_m-Ar may be substituted or unsubstituted;

A^3 and A^4 are independently alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, alkoxy, heteroalkoxy, Z_m-cycloalkyl wherein said cycloalkyl is saturated or partially unsaturated, Z_m-heterocycloalkyl wherein said heterocycloalkyl is saturated or partially unsaturated, Z_m-Ar, Z_m-O-R^6, Z_m-SR^6, Z_m-NR^6R^7, Z_m-$C(=O)R^6$, Z_m-$OC(=O)R^6$, Z_m-$C(=O)OR^6$, Z_m-$(C=O)NR^6R^7$, or Z_m-$NHC(=O)R^6$, wherein said alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, Z_m-cycloalkyl, Z_m-heterocycloalkyl, and Z_m-Ar may be substituted or unsubstituted and wherein at least one of A^3 or A^4 is at least three atoms in length;

or A^3 and A^4 together with the atoms to which they are both attached form a substituted or unsubstituted saturated or partially unsaturated ring or a substituted or unsubstituted aromatic ring having at least five atoms, wherein one or more of the atoms is optionally a heteroatom;

R^6 and R^7 are independently H, Z_m-OR^6, alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, Z_m-cycloalkyl wherein said cycloalkyl is saturated or partially unsaturated, Z_m-heterocycloalkyl wherein said heterocycloalkyl is saturated or partially unsaturated, or Z_m-Ar, wherein said alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, Z_m-cycloalkyl, Z_m-heterocycloalkyl, and Z_m-Ar may be substituted or unsubstituted;

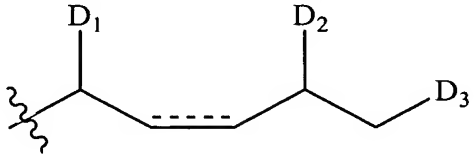
X is OR^6, oxo, heteroalkoxy, O-glucosyl, thiol, thioalkyl, NR^6R^7, halo, CN, NO_2, or azido;

Ar is aryl or heteroaryl;

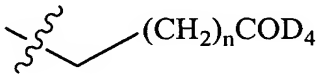
Z is CH_2; and

m is an integer between 0 and 10.

2. The method of claim 1, wherein A^3 and A^4 are independently



and



wherein

n is 3, 4, 5, 6, 7, 8, 9, or 10;

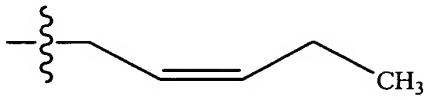
D_1, D_2 and D_3 are independently H, Z_m-OR^6, Z_m-O-glucosyl, heteroalkoxy, thiol, thioalkyl, Z_m-NR^6R^7, halo, Z_m-CN, Z_m-NO_2, or azido;

D_4 is H, Z_m-OR^6, O-glucosyl, imino, halo, Z_m-CN, Z_m-NO_2, azido, Z_m-C(=O)H, Z_m-NR^6R^7, Z_m-$COOR^6$, Z_m-$CONR^6R^7$, Z_m-$C(=O)R^6$, Z_m-$OC(=O)R^6$, alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, thiol, thioalkyl, Z_m-cycloalkyl wherein said cycloalkyl is saturated or partially unsaturated, Z_m-heterocycloalkyl wherein said heterocycloalkyl is saturated or partially unsaturated, or Z_m-Ar^1, wherein said alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, Z_m-cycloalkyl, Z_m-heterocycloalkyl, and Z_m-Ar^1 may be substituted or unsubstituted;

or D_4 and X, or D_4 and D_3 together form a lactone; and

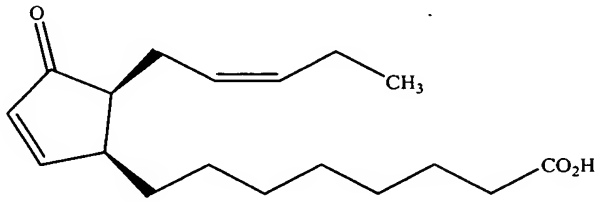
m is an integer between 0 and 10.

3. The method of claim 1, wherein A^3 and A^4 are independently



or

4. The method of claim 1, wherein the compound is



5. The method of claim 1, wherein A^3 and A^4 together form a six-member ring.

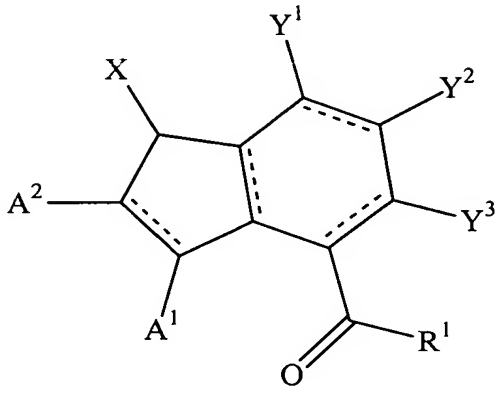
6. The method of claim 5, wherein said six-member ring contains at least one carbon-carbon multiple bond.

7. The method of claim 5, wherein said six-member ring is aromatic.

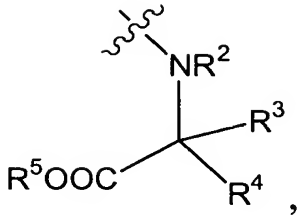
8. The method of claim 5, wherein said six-member ring contains at least one additional substituent group.

9. The method of claim 8, wherein said at least one additional substituent group is selected from the group of H, OR^6, oxo, halo, CN, NO_2, azido, NR^6R^7, $COOR^6$, $CONR^6R^7$, $C(=O)R^6$, $OC(=O)R^6$, alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, thiol, thioalkyl, Z_m-cycloalkyl wherein said cycloalkyl is saturated or partially unsaturated, Z_m-heterocycloalkyl wherein said heterocycloalkyl is saturated or partially unsaturated, or Z_m-Ar, wherein said alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, Z_m-cycloalkyl, Z_m-heterocycloalkyl, and Z_m-Ar may be substituted or unsubstituted.

10. The method of claim 1, wherein the compound is



wherein R^1 is



R^2, R^3, R^4 and R^5 are independently H, Z_m-OR^6, alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, Z_m-NR^6R^7, Z_m-$COOR^6$, Z_m-$CONR^6R^7$, Z_m-$C(=O)R^6$, Z_m-$OC(=O)R^6$, Z_m-cycloalkyl wherein said cycloalkyl is saturated or partially unsaturated, Z_m-heterocycloalkyl wherein said heterocycloalkyl is saturated or partially unsaturated, or Z_m-Ar, wherein said alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, Z_m-cycloalkyl, Z_n-heterocycloalkyl, and Z_m-Ar may be substituted or unsubstituted,

or R^3 and R^4 together with the atoms to which they are both attached form a saturated or partially unsaturated ring, wherein said saturated ring or partially unsaturated ring may be substituted or unsubstituted; and

Y^1, Y^2, and Y^3 are independently H, Z_m-OR^6, alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, Z_m-NR^6R^7, Z_m-$COOR^6$, Z_m-$CONR^6R^7$, Z_m-$C(=O)R^6$, Z_m-$OC(=O)R^6$, Z_m-cycloalkyl wherein said cycloalkyl is saturated or partially unsaturated, Z_m-heterocycloalkyl wherein said

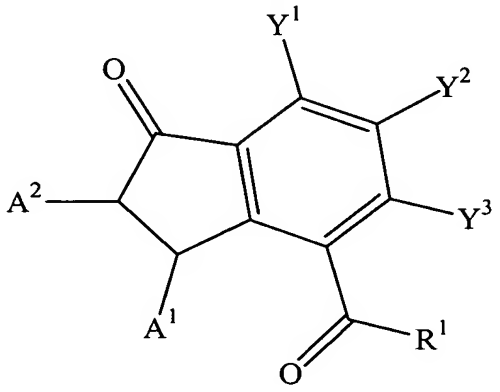
heterocycloalkyl is saturated or partially unsaturated, or Z_m-Ar, wherein said alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, Z_m-cycloalkyl, Z_n-heterocycloalkyl, and Z_m-Ar may be substituted or unsubstituted.

11. The method of claim 10, wherein R^1 is a substituted or unsubstituted natural or unnatural amino acid.

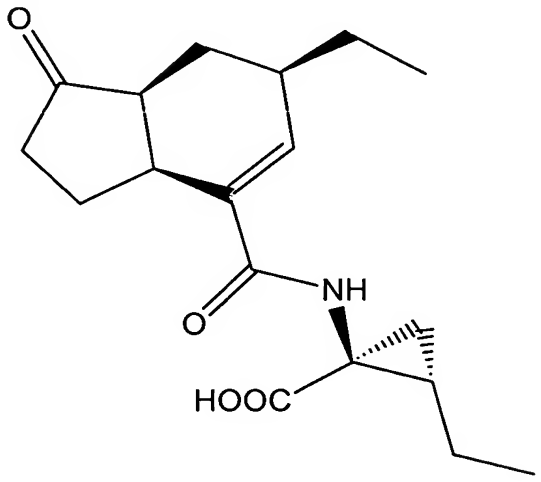
12. The method of claim 11, wherein R^1 is alanine, arginine, asparagine, aspartic acid, cysteine, glutamine, glutamic acid, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, tyrosine, or valine.

13. The method of claim 11, wherein R^1 is 4-hydroxyproline, hydroxylysine, demosine, isodemosine, 3-methylhistidine, norvaline, beta-alanine, gamma-aminobutyric acid, cirtulline, homocysteine, homoserine, ornithine and methionine sulfone.

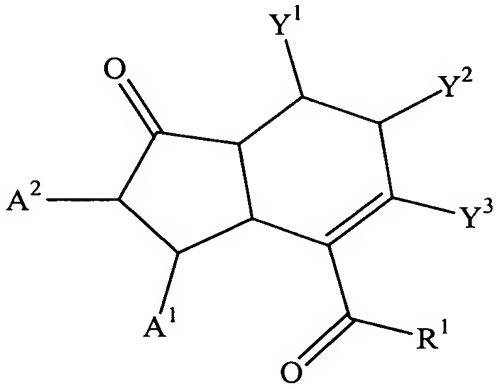
14. The method of claim 10, wherein the compound is



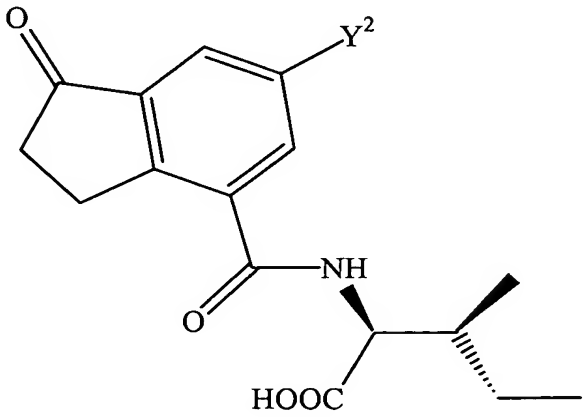
15. The method of claim 14, wherein said compound is



16. The method of claim 10, wherein said compound is



17. The method of claim 16, wherein said compound is



18. The method of claim 1, wherein said subject has cancer.

19. The method of claim 1, wherein said cancer is ovarian cancer.

20. The method of claim 1, wherein said cancer is breast cancer.

21. The method of claim 1, wherein said cancer is lung cancer.

22. The method of claim 1, wherein said cancer is lymphoma.

23. The method of claim 1, wherein said method of treatment further comprises at least one of an hourly administration, a daily administration, a weekly administration, or a monthly administration of said at least one composition.

24. The method of claim 1, wherein said administration comprises oral administration of said at least one composition.

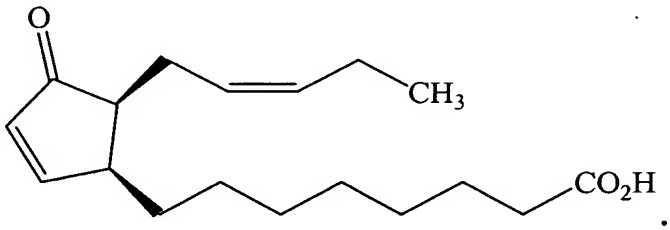
25. The method of claim 1, wherein said administration comprises injection of said at least one composition.

26. The method of claim 1, wherein said administration comprises intravenous administration of said at least one composition.

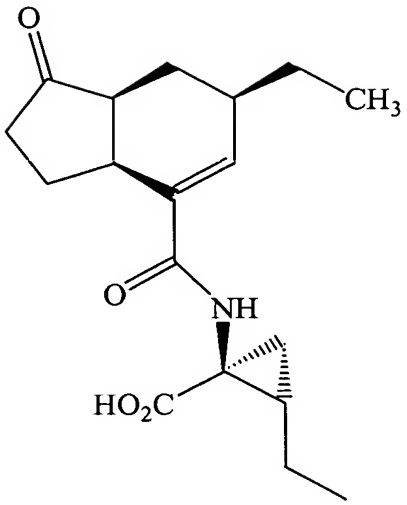
27. The method of claim 1, wherein said subject is an animal.

28. The method of claim 1, wherein said subject is a human.

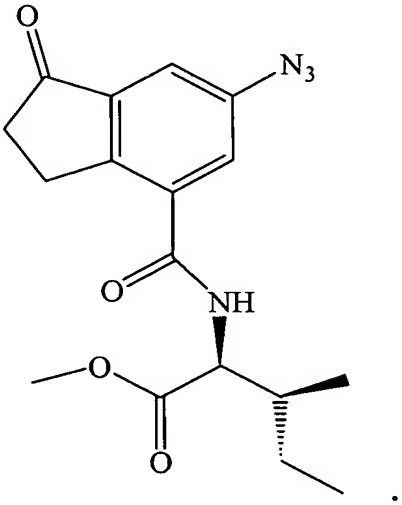
29. A method for controlling proliferative cells in a subject, comprising supplying to said subject at least one compound of the formula:



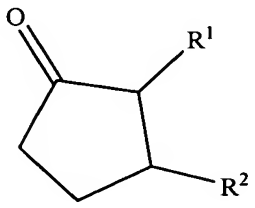
30. A method for controlling proliferative cells in a subject, comprising supplying to said subject a compound of the formula:



31. A method for controlling proliferative cells in a subject, comprising supplying to said subject a compound of the formula:



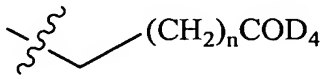
32. A method for conducting a clinical trial comprising supplying to a subject at least one compound of the formula:



wherein said composition contains at least one additional carbon-carbon multiple bond; and

wherein one or both of R^1 and R^2 define a structure selected from the group consisting of (a) at least one substituent selected from the group of hydrogen, alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, alkoxy, heteroalkoxy and (b) a second ring structure of at least five atoms.

33. The method of claim 1, wherein A^4 is

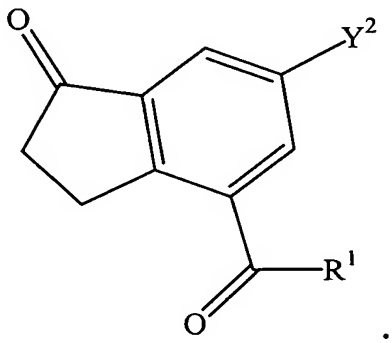


,

n is 3, 4, 5, 6, 7, 8, 9, or 10; and

D_4 is H, Z_m-OR^6, O-glucosyl, imino, halo, Z_m-CN, Z_m-NO_2, azido, Z_m-C(=O)H, Z_m-NR^6R^7, Z_m-$COOR^6$, Z_m-$CONR^6R^7$, Z_m-$C(=O)R^6$, Z_m-$OC(=O)R^6$, alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, thiol, thioalkyl, Z_m-cycloalkyl wherein said cycloalkyl is saturated or partially unsaturated, Z_m-heterocycloalkyl wherein said heterocycloalkyl is saturated or partially unsaturated, or Z_m-Ar^1, wherein said alkyl, allyl, alkenyl, alkynyl, heteroalkyl, heteroallyl, heteroalkenyl, heteroalkynyl, heteroalkoxy, Z_m-cycloalkyl, Z_m-heterocycloalkyl, and Z_m-Ar^1 may be substituted or unsubstituted.

34. A method of controlling proliferative cells in a subject, comprising administering a therapeutically effective amount of at least one compound having the formula:

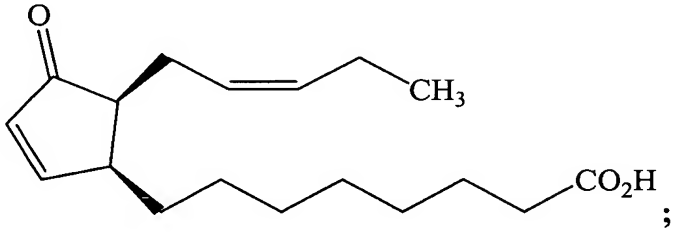


.

35. The method of claim 34, wherein R^1 is alanine, arginine, asparagine, aspartic acid, cysteine, glutamine, glutamic acid, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, tyrosine, or valine.

36. The method of claim 34, wherein R^1 is 4-hydroxyproline, hydroxylysine, demosine, isodemosine, 3-methylhistidine, norvaline, beta-alanine, gamma-aminobutyric acid, cirtulline, homocysteine, homoserine, ornithine and methionine sulfone.

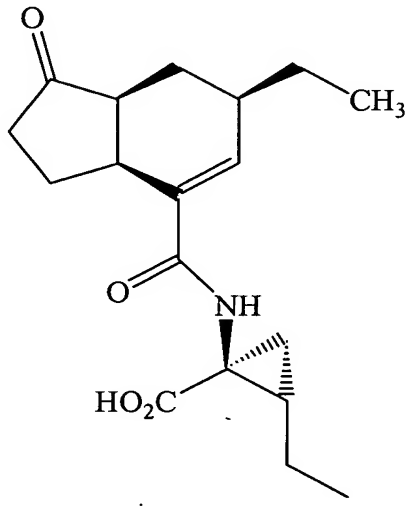
37. A pharmaceutical composition for controlling proliferative cells in a subject, comprising a therapeutically effective amount of a compound having the formula:



;

and a pharmaceutically acceptable carrier.

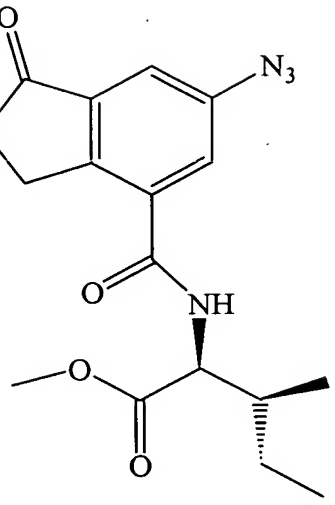
38. A pharmaceutical composition for controlling proliferative cells in a subject, comprising a therapeutically effective amount of a compound having the formula:



;

and a pharmaceutically acceptable carrier.

39. A pharmaceutical composition for controlling proliferative cells in a subject, comprising a therapeutically effective amount of a compound having the formula:



;

and a pharmaceutically acceptable carrier.